ENVIRONMENTAL ASSESSMENT

HOOPER ROAD (LA 408)
(BLACKWATER ROAD TO SULLIVAN ROAD)
EAST BATON ROUGE PARISH

City/Parish Project No. 12-CS-HC-0017
State Project No. H.002316/H.002317

Revised January 2016

EAST BATON ROUGE PARISH
DEPARTMENT OF PUBLIC WORKS

THE GREEN LIGHT PLAN

FEDERAL HIGHWAY ADMINISTRATION

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

TABLE OF CONTENTS

Section **Page No.**

Tables

Figures

Appendices

LIST OF ACRONYMS

ADT	Average Daily Traffic
AIAN	American Indian and Alaska Native
APE	Area of Potential Effect
BFE	Base Flood Elevations
dBA	A-weighted Decibels
DTOE	District Traffic Operations Engineer
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
LA 408	Louisiana Highway 408
LADOTD	Louisiana Department of Transportation and Development
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
LDWF	Louisiana Department of Wildlife and Fisheries
LOS	Level of Service
MUTCD	Manual on Uniform Traffic Control Devices
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHPI	Native Hawaiian and Pacific Islander
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ROW	Right-of-Way
TRB	Transportation Research Board
UA	Urban Arterial
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U. S. Fish and Wildlife Service
UST	Underground Storage Tank

ENVIRONMENTAL CHECKLIST

WBS No. H.002316/H.002317
Name: Hooper Road (Blackwater Road – Sullivan Road)
Route: LA 408
Parish: East Baton Rouge

1. General Information

☒Conceptual Layout ☐Line and Grade ☐Preliminary Plans
☐Survey ☐Plan-in-Hand ☐Advance Check Prints

2. Class of Action

☐ Environmental Impact Statement (E.I.S.) ☐ State Funded Only (EE/EF/ER)
☒ Environmental Assessment (E.A.)
☐ Categorical Exclusion (C.E.)
☐ Programmatic C.E. (as defined in FHWA letter of agreement dated 03/15/95)

3. Project Description

The project consists of widening Hooper Road (LA 408) between Blackwater Road and Sullivan Road from a two-lane roadway to a 4-lane roadway with a raised median, curb and gutter drainage and sidewalks.

4. Public Involvement

☒ Views were solicited. (February 5, 2015. Responses are attached)
☐ Views were not solicited.
☒ Public Involvement events held. (List events and dates in Section 11.)
☒ A public hearing/opportunity for requesting a public hearing required. (List dates in Section 11.)
☐ A public hearing/opportunity for requesting a public hearing not required.

5. Real Estate

	NO	YES	N/A
a. Will additional **right-of-way** be required?	☐	☒	☐
Is right of way required from a **burial/cemetery** site? ……..	☒	☐	☐
Is right-of-way required from a Wetland Reserve Program (**WRP**) property?	☒	☐	☐
Is required right-of-way prime **farmland**? (Use form AD 1006, if needed) ...	☒	☐	☐
b. Will any **relocation** of residences or businesses occur?	☒	☐	☐
c. Are construction or drainage **servitudes** required?	☐	☒	☐

6. Section 4(f) and Section 6(f)

	NO	YES	N/A
a. Will historic sites or publicly owned parks, recreation areas, wildlife or waterfowl refuges (**Section 4f**) be affected? ……	☒	☐	☐
b. Are properties acquired or improved with **L&WC** funds affected? …….....	☒	☐	☐

7. Cultural Section 106

		NO	YES	N/A
a.	Are any **known historic properties** adjacent or impacted by the project? (If so, list below)……..	☐	☒	☐
b.	Are any k**nown archaeological sites** adjacent or impacted by the project? (If so, list site # below) ……..	☒	☐	☐
c.	Would the project affect property owned by or held in trust for a federally recognized **tribal government**?	☒	☐	☐

8. Natural & Physical Environment

		NO	YES	N/A
a.	Are **wetlands** affected? …….....	☐	☒	☐
b.	Are **other waters** of the U.S. affected? …….....	☐	☒	☐
c.	Are **Endangered/Threatened Species**/Habitat affected? ……	☒	☐	☐
d.	Is project within 100 Year **Floodplain**?	☐	☒	☐
e.	Is project in **Coastal Zone** Management Area? ….....	☒	☐	☐
f.	Is project in a **Coastal Barrier Resources** area? ……..	☒	☐	☐
g.	Is project on a **Sole Source Aquifer**? ……..……..	☐	☒	☐
h.	Is project impacting a **navigable waterway**?	☒	☐	☐
i.	Are any State or Federal **Scenic Rivers/Streams** impacted? ……	☒	☐	☐
j.	Is a **noise** analysis warranted (Type I project) ……	☐	☒	☐
k.	Is an **air** quality study warranted?	☐	☒	☐
l.	Is project in a **non-attainment** area? ……..	☐	☒	☐
m.	Is project in an approved Transportation Plan, Transportation Improvement Program (TIP) and State Transportation Improvement Program (**STIP**)?	☐	☒	☐
n.	Are **construction** air, noise, & water impacts major? ……..	☒	☐	☐
o.	Will the project affect or be affected by a **hazardous waste site**, leaking underground storage tank, oil/gas well, or other potentially contaminated site?	☒	☐	☐

9. Social Impacts

		NO	YES	N/A
a.	Will project change **land use** in the area? ……	☒	☐	☐
b.	Are any c**hurches and schools** impacted by or adjacent to the project? ….. (If so, list below) Zoar Baptist Church	☐	☒	☐
c.	Has **Title VI** been considered? ……	☐	☒	☐
d.	Will any **specific groups** be adversely affected? (i.e., *minorities, low-income, elderly, disabled,* etc.) ……	☒	☐	☐
e.	Are any h**ospitals, medical facilities, fire police** facilities impacted by or adjacent to the project? (If so, list below)……	☒	☐	☐
f.	Will **Transportation patterns** change? ……..	☒	☐	☐
g.	Is **Community cohesion** affected by the project? ……	☒	☐	☐
h.	Are **short-term social/economic** impacts due to construction considered major?	☒	☐	☐
i.	Do conditions warrant **special construction times?** (i.e., *school in session, congestion, tourist season, harvest*) ……	☒	☐	☐
j.	Were **Context Sensitive Solutions** considered? (If so explain below)……	☐	☒	☐
k.	Were **bike and pedestrian** accommodations considered? (explain below)…..	☐	☒	☐
l.	Will the **roadway/bridge be closed?** (If yes, answer questions below)……	☒	☐	☐
	Will a **detour bridge** be provided?	☐	☐	☐
	Will a **detour road** be provided?	☐	☐	☐
	Will a **detour route** be signed?	☐	☐	☐

10. Permits (Check all permits that may be required)

☒Corps Nationwide	☐CUP/Consistency Determination	☐LA Scenic Stream
☐ Corps Section 404/10	☐ USCG Bridge	☐ DEQ WQC
☐ Levee	☐ USCG Navigational Lights	☒ PDES Stormwater
☐ Other (explain below)		

11. Other (Use this space to explain or expand answers to questions above.)

Item no. 4. **Public Involvement Events**
A Public Meeting was held on April 15, 2014.

Item no. 4. **Public Hearing**
A Public Hearing will be held at a date to be determined.

Item no. 7a. **Historic Structure**
A potential eligible NRHP structure (11646 Hooper Road) is located adjacent to the project but will not be impacted.

Item no. 9b. **Churches and Schools**
Zoar Baptist Church is near the Hooper Road/Joor Road intersection. Their existing parking lot will be impacted by a proposed bulbout. Ten (10) parking slots will be impacted by the bulbout. It appears that there is additional land to the west of the parking lot that could be used to mitigate/relocate these parking slots.

Item no. 9j. **Context Sensitive Solutions**
Meetings were held with the City of Central to get their input related to project features and a Public Meeting was held to provide the public with an opportunity to be involved in aiding with the development of project alternatives.

Item no. 9k. **Bike & Pedestrian**
The roadway typical section will include the use of wider outside travel lanes as a shared lane for bicycles.

Preparer: Richard L. Savoie
Title: Project Manager
Date: March 2015

Attachments

☒ S.O.V. and Responses
☒ Wetlands Finding (Appendix J)
☐ Project Description Sheet
☐ Conceptual Stage Relocation Plan (not needed)
☒ Noise Analysis (Appendix L)
☒ Air Analysis (Appendix G)
☒ Exhibits and/or Maps (Appendix A and B)
☒ 4(f) Evaluation (Appendix I)
☐ Form AD 1006 (Farmlands)
☐ 106 Documentation
☐ Other_____

SUMMARY OF PERMITS, MITIGATION MEASURES, AND COMMITMENTS

A permit will be required from the U.S. Army Corps of Engineers, New Orleans District. Approximately 0.85 acres of jurisdictional wetlands and 1773 lin. ft. of Direct Stream Impacts are to be potentially impacted (see Appendix J) within the proposed project limits. This recommendation will be sent to the US Army Corps of Engineers, which has the ultimate responsibility as to whether or not it is jurisdictional. Impacts to jurisdictional wetlands will be mitigated, if any are found within the project limits, as part of the permit process.

A Parish/State Agreement between East Baton Rouge Parish and LADOTD regarding a required new wastewater collection system must be in place before the project can be let for construction. The agreement should state that the Parish will pay for the design and all construction costs associated with these wastewater collection systems and will assume all future liabilities. Because the design of the Build Alternative includes subsurface drainage, wastewater collection systems must be in place before construction is complete.

LADOTD's Complete Streets Policy is proposed to be implemented through the construction of sidewalks. Maintenance and liability for sidewalks outside the limits of the curb would be the responsibility of the local jurisdiction. An agreement between LADOTD and the City of Central will be required for the construction and maintenance of the sidewalks. The roadway typical section will include the use of wider outside travel lanes as a shared lane for bicycles. LADOTD has adopted an Access Management Policy for the construction of new roadways and reconstruction of existing roadways. Access Management is the control of access connections on a roadway to mitigate impacts to safety performance. Access connections can include driveways, streets, and other means of connecting to a roadway. The policy would be implemented through the use of raised medians; right-in/right-out only (i.e. no left-in or left-out turns) from residential and business driveways as well as adjacent roadways; and partial median openings allowing U-turns and left-in turns.

Five live oak trees (*Quercus virginiana*) trees were identified as being significant according to the LADOTD Significant Tree Policy (see Appendix K). The Design Section will indicate significant trees on the plans and implement a context sensitive design to accommodate these trees where practical. Prior to construction authorization, a professional arborist licensed in the State of Louisiana will be retained by the LADOTD District or the LADOTD contractor to ensure protection of the significant trees. When cutting, trimming, or removing a significant tree or a group of significant trees located within or adjacent to the required ROW, the stakeholders and local government will be informed by the LADOTD District or the LADOTD contractor three (3) days prior to those actions. Also, the potentially eligible NRHP structure at 11646 Hooper Road should be avoided during all phases of construction.

The LADOTD Floodplain Management Coordinator stated that during and after the project, consideration must be given for the occurrence of a base flood inundation. At this time, consideration should also be given to the responsibility for clearing debris and keeping the area cleared so as not to interfere with its function. A storm water discharge permit will be obtained from LDEQ for the project prior to construction authorization and best management practices will be implemented to manage runoff and prevent pollution. The contractor will be required to adhere to the provisions of the Louisiana Standard Specifications for Roads and Bridges. Other federal, state, and local permits may be required.

EXECUTIVE SUMMARY

This Environmental Assessment (EA) document summarizes the anticipated impacts resulting from the proposed LA 408 Widening and Improvements project. The project length is approximately 14,700 feet (2.78 miles), East Baton Rouge Parish, State Project No. H.002316/H.002317, City/Parish Project No. 12-CS-HC-0017. The FHWA-approved logical termini for the study area of the proposed project are along LA 408 approximately 2,800 feet east of Blackwater Road (LA 410) to just west of Sullivan Road (LA 3034). The project would continue the existing 4-lane divided highway from the west, and tie to a proposed LADOTD intersection improvement project at Sullivan Road. The Joor Road intersection is an exception to the construction limits since approximately 1500 feet currently exists as a 5-lane urban section. The existing roadway is primarily a two lane roadway with 11-foot wide travel lanes from 2,800 feet east of Blackwater Road (LA 410) to the intersection with Joor Road and from Joor Road to Sullivan Road. This section is considered an urban arterial roadway. This roadway serves as a major commuter link for the residents of the City of Central. The existing Level of Service (LOS) on LA 408 is LOS B.

A Build Alternative (Alternative E) was selected to move forward for further consideration (Appendix A).

LADOTD's Access Management Policy is proposed to be implemented through the use of raised medians; right-in / right-out only (i.e. no left-out turns) from residential and business driveways as well as adjacent roadways; and median openings allowing U-turns and left-in turns. In addition, ROW will be required for fourteen bulb-outs which will provide the necessary turn radius to allow vehicles to make U-turns. All median openings will include left turn lanes.

Curb and gutter with subsurface drainage would be installed for the length of the project along LA 408. There would be no open ditches along this portion of the LA 408 roadway.

The Build Alternative (Alternative E) was evaluated for the impacts upon the environment. The Wetland Report indicates that approximately 0.85 acres of jurisdictional wetlands and 1773 Lin. Ft. of Direct Stream Impacts would be affected by the project. The Phase I Environmental Site Assessment indicates the presence of "recognized environmental conditions," identified as the presence of underground storage tanks; however, there are no sites with leaking USTs or potentially leaking USTs within the project limits. The Traffic Noise Study indicated noise impacts to numerous receptors from the Build Alternative (Alternative E); however, noise abatement measures were not found to be reasonable or feasible.

A total of approximately 9.86 acres of additional right-of-way will be required for the proposed project. No homes or business within the proposed ROW are anticipated to be relocated. A bulb-out improvement in the vicinity of Zoar Baptist Church will impact church parking slots; however, no relocation of the structure is anticipated.

No minority and/or low income populations would be disproportionately adversely impacted, no threatened or endangered species would be impacted and no violations of the CO thresholds for air quality would be expected with the proposed project. The project limits do not contain any known wetland reserves or scenic streams. The EPA's review concluded that the project corridor

does lie within the boundaries of a designated sole source aquifer, but would have no adverse impacts. There are no anticipated negative impacts to the flood plain as a result of the proposed Build Alternative (Alternative E). Encroachments upon the floodplains would not increase the BFE to a level that would violate applicable floodplain regulations. The NRCS has determined that the proposed construction areas are within urban areas and the proposed project is exempt from the Farmland Protection Policy Act.

Project costs were estimated for construction of the Build Alternative (Alternative E), along LA 408, from approximately 2,800 feet east of Blackwater Road (LA 410) to just west of Sullivan Road (LA 3034). The Build Alternatives' (Alternative E) construction cost is estimated at approximately $18.26 million.

In addition, the No-Build Alternative was evaluated. Under the No Build Alternative, no construction would take place along the existing highway. The roadway would remain as is with open ditches, 2-foot wide narrow shoulders, and two11-foot wide travel lanes. Neither future capacity concerns nor safety concerns would be addressed. No residential or business relocations would be required, and no potential impacts to public lands or wetlands would occur. No utility relocations would be needed. The short-term adverse impacts due to construction activity would be avoided. No subsurface drainage would be installed. The No Build Alternative would result in continued degradation of the level of service, especially at the intersections. The No Build Alternative would not meet the purpose and need of the project.

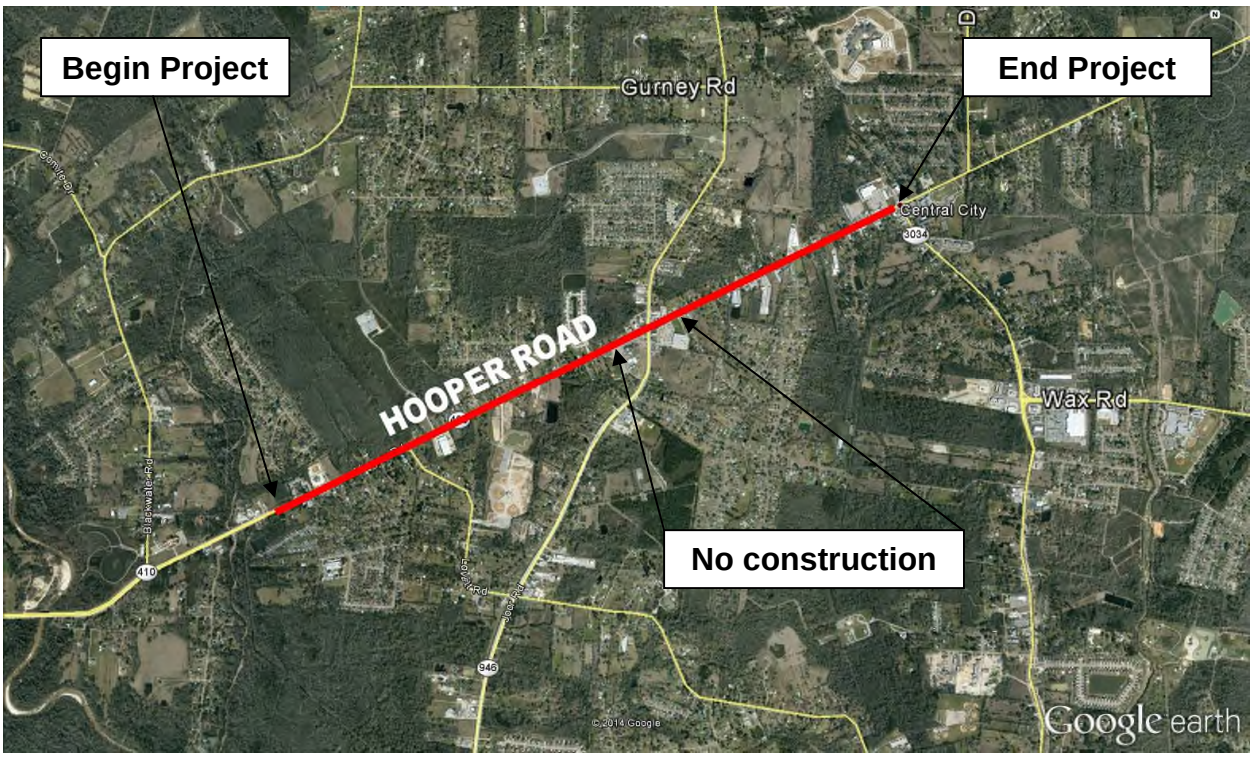

Figure 1 – Project Location

1.0 Introduction

1.1 What is an Environmental Assessment?

The National Environmental Policy Act (NEPA) directs federal agencies to conduct environmental reviews to consider the potential impacts from proposed federal undertakings. The NEPA process requires coordination with local, state, and federal agencies throughout planning and project development decision making.

FHWA and LADOTD are committed to the examination and minimization of potential impacts to the social and natural environment when considering approval of proposed transportation projects. NEPA project development considers a range of alternatives that would serve the purpose of the project while balancing the potential impacts on the human and natural environment with the public's need for safe and efficient transportation.

The NEPA process must be clearly documented to ensure transparency. Potentially affected communities and other stakeholders are offered the opportunity to ask questions and provide comments about proposals, alternatives, and environmental impacts. Public input is formalized in the document as are the responses to public concerns and the choices made about the project.

When the significance of impacts from a proposed transportation project is uncertain, an EA is prepared. Unlike an Environmental Impact Statement (EIS) that is prepared when significant impacts are known, an EA is a concise public document that presents sufficient evidence and analysis for determining whether the impacts from the proposed action warrant further analysis in an EIS, or whether a Finding of No Significant Impact (FONSI) is appropriate.

1.2 Where is the Proposed Project in the Development Process?

The purpose and need for the project has been documented and a reasonable, feasible alternative has been developed to address the need. This EA document will evaluate the effects of the Build Alternative to the community and the environment. The East Baton Rouge Green Light Program funds are being utilized for the environmental process.

Prior to commencement of the EA, the East Baton Rouge Green Light Program sent out preliminary project information and preliminary purpose and need to federal, state, and local agencies and officials along with other potential stakeholders requesting their views regarding the project.

FHWA approved the logical termini, i.e., the end points of the project study area, as approximately 2,800 feet east of Blackwater Road (LA 410) to just west of Sullivan Road (LA 3034). The project length is approximately 14,700 feet (2.78 miles).

A Public Hearing will be held after this EA is approved by FHWA for public distribution. Following the environmental process, the project will proceed when funding becomes available.

2.0 Project Purpose and Need

2.1 What is the Purpose of the Project?

The purpose of the project is to increase the capacity of the roadway to improve traffic flow, and account for projected traffic growth within the immediate area. To accomplish these purposes, the project proposes to widen the roadway and upgrade LA 408 in accordance with current design criteria. The project is also part of the East Baton Rouge Green Light Plan.

Based on the LADOTD highway functional systems, LA 408 is classified as an urban arterial road. It has varying right-of-way widths, overhead utilities, underground utilities, telephone cable crossings, and gas pipeline utilities within the rights-of-way. Currently, from Blackwater Bayou to Joor Road, LA 946, the existing roadway consists of two 11-foot wide asphaltic concrete travel lanes with 2-foot wide shoulders and open ditches for the majority of the route. The same roadway section exists from Joor Road, LA 946 to Sullivan Road, LA 3034.

A traffic study was conducted for the proposed project in January 2013 to evaluate existing traffic conditions and evaluate future transportation impacts associated with upgrading LA 408. The Traffic Study is provided in Appendix C. Traffic volume data was collected in 2013; the build year was determined to be 2017 and the design year was selected as 2037. Traffic counts measured existing average daily traffic (ADT), and a growth rate of 2 percent (as provided by LADOTD Planning Section) was used to project future traffic. The existing and future ADT along the project corridor is provided in Table 2.1.

Table 2.1 - Existing and Future Average Daily Traffic

LA 408 Roadway Segment	Existing Year (2013)	Design Year (2037)
East of Blackwater Bayou	14,834	23,800
East of Joor Road	15,483	24,900

Within the project limits, there are two signalized intersection. The traffic signals operate as fully actuated. The other eleven key intersections are controlled by side street stop signs. Vehicle classification counts for the project corridor reveal that heavy vehicles make up approximately 17 percent of the ADT to the east of Blackwater Bayou and approximately 4 percent of the ADT to the east of Joor Road. The posted speed limit on this portion of LA 408 is 45 miles per hour.

2.1.1 Capacity

A capacity analysis, the most commonly accepted method for evaluating the quality of service of highway and street facilities was prepared for the project and is detailed in the traffic analysis. Level of Service (LOS) is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Depending on these operational conditions, the roadway is assigned a grade of A through F. An “A” represents free flow traffic and an “F” represents operational failure, with ease of traffic movement becoming increasingly difficult as the volume of traffic increases.

The design year for the proposed widening of Hooper Road is considered as 2037. Traffic volumes on Hooper Road are assumed to grow annually at the rate of two percent through 2037.

Table 2.2 - Existing and Future Level of Service

Intersection	Existing Year (2013)		Design Year (2037)	
	AM	PM	AM	PM
Hooper Road at Lovett Road	B	B	B	B
Hooper Road at Joor Road	B	B	C	D

The Lovett Road and Joor Road intersection are signal controlled. There are eleven other side street intersections within the project limits that are controlled by stop signs. Following LADOTD's Access Management Policy, most left turns have been restricted and access has been limited to right-in / right-out turning movements. Six directional U-turn openings are proposed along Hooper Road within the project limits.

The Traffic Study analyzed the traffic conditions at the three (3) most significant side streets controlled by stop signs (Lansdowne Rd, Carmel Ave and Shoe Creek Dr). Only Lansdowne Road warranted a westbound left-turn from Hooper Road. Movement from Lansdowne Road is to be restricted in right-in / right-out turning movements.

A public school, Tanglewood Elementary, is accessed from Hooper Road primarily via Lansdowne Road with secondary access via Tanglewood Drive. Through discussions early in the project, left-turn movements from Hooper Road were provided at both locations. Access to the newly constructed BREC park is via Recreation Blvd. Left-turn movement from westbound Hooper Road was requested at the Public Meeting. Turning movements from both Tanglewood Drive and Recreation Blvd is to be restricted to right-in / right-out only.

Along with the proposed widening of Hooper Road within the study limits, the following improvements to study area intersections are being recommended:

- Hooper Road at Lansdowne Road
  - Provide westbound left-turn lane with 180 feet of storage.
- Hooper Road at Tanglewood Drive
  - Provide westbound left-turn lane with 180 feet of storage.
- Hooper Road at Recreation Blvd.
  - Provide westbound left-turn lane with 180 feet of storage.
- Hooper Road at Lovett Road
  - Provide eastbound right-turn lane with 200 feet of storage.
  - Provide westbound left-turn lane with 150 feet of storage.
  - Operate westbound left-turn with protected/permitted phasing.
  - Provide northbound right-turn with 50 feet of storage.

Traffic operations analysis was conducted for study area intersections assuming the implementation of proposed recommendations listed above. With the proposed improvements

and the road widening, the study area intersections continue to operate at acceptable LOS during the morning and evening peak hours. For additional information see the Traffic Study, App. C.

The Lovett Road intersection was evaluated both with and without the recommended turn lane improvements. While the overall intersection level of service for the 2037 Design Year remained constant at a LOS of B, the queues along each leg lengthened considerably without the dedicated turn lanes as proposed. The queue lengths without the improvements were 2-10 times higher than that calculated with the proposed improvements, and were projected to be 192-353 feet. While the omission of turn lanes does not appear to have a significant quantitative impact to the intersection level of service, we recommend the proposed turn lanes be included in the roadway improvements. Removing the queues from through travel lanes and locating them in dedicated turn lanes provides a safer intersection [ref. Highway Safety Manual 14.6.2.2]. For additional information on the level of service calculations, see the Traffic Study – Additional Analysis memorandum, App. C.

2.1.2 System Linkage

The Hooper Road project is part of the Hooper Road East-West Corridor. This corridor begins at I-110 near the Baton Rouge Metro Airport and runs eastward on Harding Boulevard, and continues on Hooper Road to near the East Baton Rouge/Livingston Parish Line. This existing corridor is approximately 10.5 miles. Of these 10.5 miles, approximately 5 miles are currently a 4-lane divided highway. With the combination of the Hooper Road project and the Hooper Road Extension project, currently under study by the LADOTD, the entire east-west corridor would be upgraded to a 4-lane divided highway. This improved corridor will allow for increased traffic flow between Livingston Parish, the City of Central, northern Baton Rouge, the Baton Rouge Metro Airport, and Southern University.

2.1.3 Social Demands or Economic Development

As an interchange on I-110 in North Baton Rouge gives access to the City of Central via LA 408, the Central area of East Baton Rouge Parish has developed at a relatively slow pace. Land use along this portion of LA 408 has remained single family residences with mixed light commercial. Some single street subdivisions have developed in recent times and a new BREC Park with commercial frontage on LA 408 was recently constructed. There remain some large tracts of land that are used for agriculture and livestock. The City of Central has developed a Land Use plan that calls for Medium Density Residential development within the Blackwater Road to Joor Road section and General Commercial Development within the Joor Road to Sullivan Road section of the project. It is anticipated that this growth will increase the demand for additional highway capacity. Improvements to the LA 408 corridor within this project and the proposed extension into Livingston Parish will also improve the ability of tourist, recreational, and commercial vehicles to move along the corridor more efficiently. Such efficiency is an important economic factor for these industries, which are very important to the economy of the City of Central and East Baton Rouge Parish.

3.0 Alternative Analysis

NEPA requires that reasonable alternatives which could address the identified needs and purposes be considered, including a No Build Alternative. A range of alternatives were identified and examined against the established need for the project. Some alternatives were eliminated because they did not meet the established objectives. Those that were determined to meet the project need and purpose were carried forward for further study.

3.1 Which Alternatives Were Initially Considered?

3.1.1 Traffic Management Systems

One way to deal with capacity issues is to implement systems such as traffic signals that manage the flow and movement of traffic within the existing facility. Traffic signals can provide better flow of traffic, increase capacity, create necessary gaps, and reduce certain types of accidents. However, traffic signals do not answer all traffic-related problems at intersections. In some instances, such as when a signal is not warranted, conditions can actually worsen and become a safety hazard.

Signalization at required left turns from LA 408 would not improve the LOS on the LA 408 roadway, but would cause regular delays even when there was no turning traffic. The proposed project would include the addition of turn pockets within the median to provide queuing space for vehicles turning left outside the through lanes on LA 408. This means of dealing with the capacity issue would avoid the expense of installing, operating, and maintaining a signal. Therefore, a traffic management alternative using signals was eliminated from further consideration.

3.1.2 Design Alternatives

Because the purpose of the project is to increase the capacity and improve the traffic flow of Hooper Road (LA 408), the only reasonable engineering concept is to upgrade the existing roadway to a four-lane, divided or raised median roadway. The use of a divided or raised median four-lane roadway facility is becoming a typical section of choice amongst many state departments of transportation around the country. Advantages of divided multi-lane roadway facilities include: an increase in safety due to less conflict points and typical angle of crashes; improved travel speeds, and provide for landscaping in medians. The two main disadvantages of a divided 4-lane roadway include the need for greater right-of-way than an undivided multilane roadway; and access to the roadway from adjacent property is limited to a “right-in, right-out” configuration. Full access median openings shall be designed only for public roadways that meet MUTCD Traffic Signal Warrant 1A (100%). Full access median openings shall be designed with left turn lanes where the storage lengths have been verified by the DTOE.

Left turns from side streets where median openings are not present would be accomplished by right turn from the cross street (or driveway) into traffic flow and then a subsequent U-turn. Although these U-turns add additional turning movements, they are considered safer than cross traffic left turn movements by eliminating side swipe and angle collisions.

Hooper Road, LA 408 is classified as an Urban Arterial roadway by the LADOTD. In accordance with the LADOTD Design Guidelines, an Urban Arterial Roadway with a raised median (16' or 30') and four 12' travel lanes was used as a typical design section for alternative development. The proposed design criteria for the road are considered to be Urban Arterial 2 (UA 2).

Typical features of a UA 2 include:

- Design speed of 45 mph
- Level of Service = C
- Travel lane width: 12 feet
- Minimum horizontal clearance, from edge of travel lane: 6 – 22 feet from back of curb

All the alternatives described below tie to the existing 1500 feet of 5-lane urban section at the Hooper/Joor Road intersection.

Alternative A – Northern Offset

Alternative A constitutes the northern offset alternative. This alternative includes adding two new lanes north of the existing two-lane highway with a raised (16' or 30') median separating the new lanes from the existing lanes. The existing roadway would serve as the two eastbound lanes and the new roadway would serve as the two westbound lanes. The existing roadway would require replacement to meet the design criteria and to accommodate the addition of subsurface drainage. This alternative would allow for the existing roadway to be utilized by motorist while the northern widening construction is taking place. Minimal impact to motorist is anticipated during construction.

Alternative B – Southern Offset

Alternative B constitutes the southern offset alternative. This alternative includes adding two new lanes south of the existing two-lane highway with a raised (16' or 30') median separating the new lanes from the existing lanes. The existing roadway would serve as the two westbound lanes and the new roadway would serve as the two eastbound lanes. The existing roadway would require replacement to meet the design criteria and to accommodate the addition of subsurface drainage. This alternative would allow for the existing roadway to be utilized by motorist while the southern widening construction is taking place. Minimal impact to motorist is anticipated during construction.

Alternative C – Symmetrical Offset

Alternative C constitutes a symmetrical offset alternative. This alternate includes building the east and westbound roadways symmetrical about the existing centerline of Hooper Road. The new roadway would be 4 lanes with a raised (16' or 30') median. The existing roadway would require replacement to meet the design criteria and to accommodate the addition of subsurface drainage. This alternative (30' median) would utilize the existing roadway for motorist while the new roadway construction is taking place to the north and south of the Hooper Road centerline. For the 16' median option motorist would have to be moved to the outside east and west bound

lanes when the raised median would be constructed. Impacts to motorist are anticipated during the construction of this option.

Alternative D – Hybrid (with sidepaths)

Alternative D constitutes a symmetrical offset alternative (16’ median) for the Blackwater Road to Joor Road section (west section) of the project. This section would include 6’ sidewalks adjacent to the back of curb on the north side of Hooper Road and a 10’ sidepath offset 4’ from the back of curb on the south side of Hooper Road. The wider sidepath allows for shared use with bicycles. The outside lanes will be 14’, measured to the gutterline. The wider lane provides a shared lane for bicycles. The sequence of construction includes building the east and westbound roadways symmetrical about the existing centerline of Hooper Road. For this 16’ median alternative motorist would have to be moved to the outside east and west bound lanes while the raised median would be constructed. For the Joor Road to Shoe Creek Drive Section (east section) of the project this alternate calls for a northerly widening (approximately 7‘north of the existing roadway centerline). The alignment would then transition to a symmetrical offset alignment from Shoe Creek Drive to Sullivan Road. This section would include 6’ sidewalks adjacent to the back of curb on the south side of Hooper Road and a 10’ sidepath offset 4’ from the back of curb on the north side of Hooper Road. Each section would be built such that motorist would utilize a combination of newly constructed outside lanes and the existing roadway during construction in the first phase thence utilizing newly constructed outside lanes while the inside lanes and median are constructed in the final phase.

Alternative E – Hybrid (w/o sidepaths)

Alternative E constitutes a symmetrical offset alternative (16’ median) for the Blackwater Road to Joor Road section (west section) of the project. This section would include 6’ sidewalks adjacent to the back of curb on the north side and south side of Hooper Road. The outside lanes will be 14’, measured to the gutterline. The wider lane provides a shared lane for bicycles. This alternate includes building the east and westbound roadways symmetrical about the existing centerline of Hooper Road for the Blackwater Road to Joor Road section (west section). For this 16’ median alternative motorist would have to be moved to the newly constructed outside east and west bound lanes while the raised median would be constructed. For the Joor Road to Shoe Creek Drive Section (east section) of the project this alternate constitutes a northerly widening (approximately 7‘north of the existing roadway centerline). The alignment would then transition to a symmetrical offset alignment from Shoe Creek Drive to Sullivan Road. This section would include 6’ sidewalks adjacent to the back of curb on the north side and south side of Hooper Road. The outside lanes will be 14’, measured to the gutterline. Each section would be built such that motorist would utilize a combination of newly constructed outside lanes and the existing roadway during construction in the first phase thence utilizing newly constructed outside lanes while the inside lanes and median are constructed in the final phase.

3.1.3 The Build Alternative

Seven design alternatives, Alt. A, 16’ and 30’Median North Offset, Alt. B, 16’ and 30’ Median South Offset, Alt. C, 16’ and 30’ Median Center Offset and Alt. D – Hybrid (with sidepaths) have been dropped from further analysis because they have a higher number (cumulative) of residential and business impacts and potential frontage impacts. The cumulative impacts to the

wetlands being filled and direct stream impacts were also higher for these design alternatives. Furthermore Alt. D – Hybrid (with sidepaths), which was developed at the request of the City of Central, was dropped from further consideration based on guidance from the AASHTO *Guide for the development of Bicycle Facilities*. Per the Guide, *"Side paths located adjacent to roadways create particular conflicts between bicycles and motor vehicles at intersections. Side paths are not recommended at locations with frequent driveways and intersections."* There are nearly 100 driveways adjacent to LA 408 within the limits of the project, not including side streets. The impacts were depicted in the Alternative Analysis Memorandum, dated February 2015 and Table 4.2 of this document.

The Build Alternative, Alternative E, was chosen to move forward through the EA process because it addresses all of the aspects of the project purpose and need, has the least residential and business impacts and the lowest cumulative impacts to the wetlands being filled and direct stream impacts. The Build Alternative (illustrated on Plates 1 - 6 in Appendix A) includes the Complete Streets Policy and the Access Management Policy, both of which have been adopted by LADOTD for the construction of new roadways.

The alignment of LA 408 will remain essentially the same for the Build Alternative. The Build Alternative would result in an improved roadway designed in accordance with current criteria. Traffic flow and traffic capacity would be increased. The typical cross section of the proposed roadway is shown in Appendix B. Under the Complete Streets Policy, the roadway would improve the quality of life for residents of the community by providing sidewalks. By using the Access Management Policy, safety impacts resulting from increased capacity will be mitigated. For a discussion of safety considerations on the build alternative, see Appendix D. The amount of required right-of-way varies throughout the project due to differences in limits of construction, toe of slope, amount of grading, bulb-out placement, right turn lanes, and other similar factors. A total of approximately 9.86 acres of additional right-of-way would be required for the proposed project.

4.0 Environmental Resources, Impacts and Mitigation

4.1 Introduction

This section presents a discussion of environmental resources that have the potential to be affected by the activities related to the Build Alternative. A description of resources found within the corridor and how they shape the human, built, and natural environments is provided as a baseline condition. How these resources could be changed by the proposed action is the foundation of the NEPA decision-making process. In cases where adverse effects cannot be avoided, consideration must be given to minimizing and mitigating them.

4.2 Impacts to the Human Environment

4.2.1 Land Use Impacts

Existing land use is primarily residential with a mix of intermittent vacant and commercial properties. Public/semi-public (churches) land use anchors the corners of Blackwater and Joor Road. East to west residential subdivisions along the corridor are: Senior Residences Subdivision, Boganvilla Estates, Tanglewood, Carmel Acres, Tanglewood West, and Winchester.

This corridor contains an area of "Intended Growth Sector". Defined as areas that match high suitability with adequate infrastructure resources, highest priority areas in which to direct new growth development and can be strongly encouraged by public participation in infrastructure improvements. Proposed land use is predominantly medium density residential with a small amount of neighborhood commercial.

The Build Alternative is not expected to limit accessibility to community activities, induce substantial changes in neighborhood character, or result in a major disruption of neighborhood cohesion. Long-term negative social impacts on the area for the Build Alternative would result mainly from possible relocations.

The No Build Alternative would result in on-going deterioration of the level of service. The proposed design improvements would not be made, traffic would be projected to increase, and safety would continue to deteriorate.

4.2.2 Noise Quality Impacts

Noise by definition is an unwanted sound and would not be considered a resource, but rather a condition that potentially affects both the human and natural environment. It is emitted from many sources, including airplanes, factories, railroads, power generating plants, and highway vehicles. The dominant noise source in the LA 408 corridor is existing traffic, which is usually a composite of noises from engine exhausts, drive trains, and tire-roadway interaction. Noise increases as the source moves closer to the receiver; therefore, the widening of LA 408 could affect those areas that would be closer to the new travel lanes. A noise study was performed to establish the magnitude of the potential impact on the ambient levels from existing and future traffic noise.

To determine if highway noise levels are compatible with various land uses, the FHWA has developed noise abatement criteria (NAC) and procedures to be used in the planning and design of highways. These abatement criteria and procedures are in accordance with Title 23 CFR Part 772, U.S. Department of Transportation, FHWA, *Procedures for Noise Abatement of Highway Traffic Noise and Construction Noise.* A summary of the federal NAC adopted by DOTD for various land uses is presented in Table 2-2 in Appendix K of the Noise Analysis Report. Also in Appendix K, Table 4-3, is the Traffic Noise Impact Summary by Alternate.

The specific location of an outdoor area where frequent human activity occurs that might be impacted by highway traffic noise is known as a sensitive receiver, or receptor. Both the Build Alternative and the No Build Alternative will have some impacts on receptors.

Noise abatement measures are considered when predicted noise levels approach or exceed the FHWA noise abatement criteria or when predicted noise levels would substantially exceed existing noise levels. Abatement measures, such as noise walls, earth berms, and depressed roadway segments, are intended to reflect or absorb highway traffic noise to reduce noise to acceptable levels. The DOTD noise policy discusses various measures that can be considered as a means for reducing or eliminating traffic noise impacts.

- Traffic Management Measures - these types of measures are not considered appropriate for this project due to their effect on the capacity and level of service of the proposed alternatives and the fact that they would not meet the purpose of and need for the proposed project.

- Roadway Alignment Selection - Modifications to the currently proposed alignments for the reduction of traffic noise levels and traffic noise impacts will not be feasible for this project.

- Buffer Zones - The development of buffer zones to provide noise mitigation was not considered appropriate as a noise abatement measure for this project since the amount of additional right-of-way required to create effective buffer zones would negatively impact existing adjacent urban land uses.

- Noise Walls - Hooper Road has many driveways leading to residential properties and impacted receptors are spread out; therefore, a noise wall is not recommended for this project.

Both feasibility and reasonableness should be achieved for the noise abatement to be justified and constructed as part of the highway project. According to LADOTD *Highway Traffic Noise Policy*, feasibility of an abatement measure is satisfied if there are no extreme physical constraints of drainage, topography, barrier height, utilities, safety, maintenance, and access to adjacent properties. Reasonableness of an abatement measure must include a reasonable abatement measure cost and the support of over half of the owners and residents of benefitted properties. For the proposed project, noise abatement measures were not found to be feasible.

4.2.3 Socioeconomic Impacts (Land Use and Community Character)

The termini of the study area lie within the City of Central. The western terminus of the project corridor is located at Blackwater Bayou and encompasses a number of local business establishments along with some residences. The project limits extend approximately 2,800 feet east of Blackwater Road (LA 410) to just west of Sullivan Road (LA 3034). The project length is approximately 14,700 feet (2.78 miles).

At the Hooper Road/Joor Road intersection there is a section of commercial development, including a grocery store and Zoar Baptist Church. The project limits east of the Hooper/Joor Road intersection continue to the intersection with Sullivan Road (LA 3034). The terminus of the corridor is another area of commercial development.

Surrounding these clusters of commercial development, the character of the corridor is light commercial and residential. Land use is light commercial and residential. The acres surrounding the corridor that are not commercial are split fairly evenly between residential subdivisions and open property. There is no farmland within the corridor. Houses are generally set back and visible from the roadway, located on tracts of land that were once undeveloped pasture land. The majority of the corridor (approximately 62%) is now zoned rural. The 2010 Census Population of the City of Central was 11,319. The City was incorporated in 2005. Population density by census tracts in the general area of the project is illustrated in Table 4.2. Large tracts of land with access to LA 408 would be expected to develop into residential subdivisions. The residences fronting the corridor and a number of properties could lose a portion of their right-of-way along LA 408 depending on the build alternate. An elementary school, Tanglewood Elementary, is within a few blocks South of La 408 and is accessible from either Lansdowne Road or Tanglewood Drive.

The proposed Build Alternative is not expected to limit accessibility to community activities, induce substantial changes in neighborhood character, or result in a major disruption of neighborhood cohesion. Long-term negative social impacts on the area for the Build Alternative result mainly from the proposed relocations.

The No Build Alternative would result in on-going deterioration of the level of service. If the proposed design improvements should not be made, traffic would be projected to increase, and safety would continue to deteriorate.

4.2.4 Economic Activities

There are approximately 42 businesses in the corridor, including some home-based businesses. Some of these businesses include branch banks, gas stations/stores, self-storage facilities, several automobile repair shops, fast food restaurants, a funeral home, dental offices and a car wash. There are several other types of businesses also along this portion of the LA 408 corridor.

Acquisition of the required ROW would affect businesses by reducing the amount of frontage. It is anticipated that there are no business relocations with the Build Alternative.

The proposed project would affect access patterns. Left turns would be limited to approximately every 0.5 mile where turn lanes cross the median, which could change the way businesses are

accessed. The addition of two lanes would improve traffic flow and would be expected to offset any impacts from the left turn limitations.

It is expected that the proposed project would produce short-term adverse impacts during the construction phase as is typical during most highway construction projects. Persons who use the roadway would be temporarily inconvenienced during the construction phase due to construction activity.

There are expected to be major expenditures required for extension of wastewater utilities, since individual wastewater treatment plants are typically used in the area. Because the design of the Build Alternative includes subsurface drainage, wastewater collection systems must be in place before construction is complete.

4.2.5 Relocations of Homes and Businesses

The ROW required for the proposed project would impact approximately 26 properties by taking a portion of the frontage for the new travel lanes, for sidewalks and for the "clear zone," which is an unobstructed, relatively flat area beyond the edge of the roadway that allows a driver to stop safely or regain control of a vehicle that leaves the roadway. The sidewalks are located within the clear zone. The acquisition of ROW does not necessarily constitute a relocation impact.

The ROW width currently owned by LADOTD along this portion of LA 408 is 40 feet on each side of the existing roadway centerline. Most structures are set back from the roadway by a sufficient distance to put them outside the limits of the ROW required for the proposed project. No homes and no businesses within the proposed ROW on both sides of the existing roadway are anticipated to be relocated with the Build Alternative. The exact number of displacements will be determined during the final roadway design and during the right-of-way acquisition process. The availability of replacement housing and land for residential and business displacements was examined. It was determined that at the time of report preparation, replacement home sites were available.

4.2.6 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations", signed by the President on February 11, 1994 directs Federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The FHWA has developed an environmental justice strategy to assess the benefits and adverse effects of transportation activities among different population groups and use that capability to develop appropriate procedures, goals, and performance measures in all aspects of their mission and to enhance their public involvement activities to ensure the meaningful participation of minority and low income populations.

The 2010 Census was used to evaluate the racial population of the census tracts adjacent to the project. The following table represents the data collected:

Table 4.1 – 2010 Census Population Data								
2010 Census Tract	White	African American	Asian	AIAN	NHPI	Some other race	Two or more races	Total
43.01	5505	940	34	27	1	14	41	6562
44.01	4034	600	36	8	0	24	55	4757
Total	9539	1540	70	35	1	38	96	11319
Percentage	84%	14%	1%	0%	0%	0%	1%	100%

FHWA defines low-income according to the Department of Health and Human Services poverty guidelines. These guidelines identify a poverty level income per the amount of persons in the family/household. The median income for census tracts 43.01 and 44.01 were evaluated for median income based on ethnicity, age and mobility. The median incomes in these census tracts do not identify a disproportionate population at the poverty levels.

Individual census blocks adjacent to the project were also evaluated to identify if clusters of minority or low-income persons in the study area exists. These individual census blocks are consistent with the percentages shown in the census tracts; therefore, no small clusters or dispersed populations exist in the study area.

No minority or low-income populations have been identified that would be adversely impacted by the proposed project as determined above. Therefore, in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23A, no further Environmental Justice analysis is required.

4.2.7 Cultural Resource Impacts

Earth Search, Inc. conducted a Phase I cultural resources survey within the Hooper Road project area. Archaeological background research determined that no previous archaeological surveys had been completed and that no previously recorded archaeological sites had been uncovered in the direct APE. This research also determined that two previous archaeological surveys had been completed within a one-mile buffer surrounding the direct APE and that one archaeological site (16EBR33) was located in the buffer. Architectural background research determined that no previously recorded standing structures, NRHP districts, and/or NRHP objects were located within the direct and indirect APE. Historic background research indicates that land claims in the vicinity of the project area were granted during the early-nineteenth century but few of them were actually occupied and developed. Historic settlement of the region increased during the late-nineteenth and early-twentieth centuries but the population was dispersed, low density, and rural.

Archaeological field investigations were confined to the direct APE. Two pedestrian transects were surveyed within the direct APE north and south of the existing foot print of Hooper Road. Systematic subsurface testing along both transects did not uncover any evidence of prehistoric and/or historic occupation within the direct APE. Subsurface testing did document moderate to major disturbance of the natural soil horizons located within the direct APE. Construction of

underground utilities, sewer lines, drainage ditches, as well as residential and commercial development were the primary agents affecting the integrity of the soil deposits in the project area.

Architectural survey encompassed both the direct and indirect APE. Seventy-five structures were identified within both aspects of the APE. The vast majority of these structures were ranch houses that did not exhibit the qualities required for nomination and listing to the NRHP. Seventeen of the remaining 19 structures also did not exhibit the qualities required for nomination and listing to the NRHP. One minimalist traditional cottage residence (11646 Hooper Road) located in the direct APE exhibited the qualities and degree of preservation to be potentially eligible for the NRHP under Criterion C.

Archaeological survey did not uncover any evidence of prehistoric and/or historic occupation in the direct APE. ESI recommends that no additional archaeological investigations be conducted in the direct APE and construction be allowed. ESI recommends that the residence (11646 Hooper Road) be avoided during all phases of highway construction. ESI does not predict adverse project effects to the building or its viewshed, based on available information. However, in the event that demolition or other harm to the structure cannot be avoided, ESI recommends consultation with the SHPO to discuss appropriate mitigation measures. The old Central School Gym at 11526 Sullivan is in the Indirect APE and no adverse effects to the building are predicted. Therefore, ESI has no further recommendations regarding this structure.

4.2.8 Schools, Churches and Public Facilities Impacts

Zoar Baptist Church is within the project limits, just west of the intersection with Joor Road. The Build Alternative for LA 408 will impact approximately 10 parking spots. These parking spots are identified as Community Properties in Table 4.2. No other Public Facilities will be impacted by the Build Alternative.

4.2.9 Section 4(f) and 6(f) Facilities

Section 4(f) of the Department of Transportation (DOT) Act of 1966 stipulates that FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites, unless there is no feasible and prudent avoidance alternative following all possible planning to minimize harm to the property; or if the use of the land would have only a *de minimis* impact, or no adverse effect, to key features of the property.

The newly constructed BREC Central Sports Park does not front Hooper Road. Based on the current information provided, the project will have no affect any Section 4(f) Resources and no further documentation is required. The Section 4(f) Findings Report is included in Appendix I.

Section 6(f) of the Land and Water Conservation Act (LWCA) requires that unavoidable conversion of lands or facilities acquired or developed with Land and Water Conservation Act funds be replaced in kind or coordinated with the Department of Interior. There are no Section 6(f) properties within the project limits.

4.2.10 Oil and Gas Wells

According to information obtained from the Louisiana Department of natural Resources (LDNR) Strategic Online Natural Resources Information Systems (SONRIS) data base, 7 oil and gas wells are located within 1 mile of the project. The SONRIS data base information is included in Appendix A of the Phase 1 Environmental Site Assessment Report.

4.2.11 Hazardous Waste Sites and Underground Storage Tanks

A separate Phase I Environmental Site Assessment was conducted for the proposed project right-of-way for all alternatives. A potential "recognized environmental condition" (REC) is defined by the American Society for Testing and Materials (ASTM) as follows:

> "The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures, on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions (ASTM E1527-05)."

Based on this definition, properties that currently contain underground storage tanks (USTs), or contained them in the past, are considered to be "recognized environmental conditions." During the Phase I Site Assessment, several sites containing current USTs and sites suspected to contain USTs in the past were found.

There are several structures, primarily residences, which may be impacted by the Build Alternative. Due to the age of the structures, it is likely that both lead paint and some asbestos-containing materials may be associated with the standing homes and businesses that may be displaced by the Build Alternatives; however, these issues are not considered to be "recognized environmental conditions." Detailed information on the Phase I Environmental Site Assessment can be found in the technical report.

4.2.12 Pipelines

Based on visual observation there is one pipeline crossing near Station 217+00. The conflict with any proposed roadway and subsurface drainage elevations can be handled during the design and utility relocation phase of the project.

4.3 Impacts to the Natural Environment

4.3.1 Waters of the US and Wetlands

Section 404 of the Clean Water Act requires that anyone interested in depositing dredged or fill material into waters of the U.S., including wetlands, must receive authorization for such

activities. The USACE has been assigned responsibility for administering the Section 404 permitting process and makes the determination of whether or not wetlands fall under their jurisdiction.

On May 27-30, 2014, CDM Smith conducted wetland delineations in East Baton Rouge Parish, Louisiana. The delineations were conducted in support of the planned widening of a 3.3-mile segment of Hooper Road. The results of these wetland delineations, summarized within this Wetlands Findings Report, were obtained following a review of the existing literature (e.g., National Wetlands Inventory [NWI] wetlands and Natural Resources Conservation Service [NRCS] soils mapping) and field investigations to determine wetland boundaries and describe wetland conditions within the project area that could be affected by the proposed action. The information provided within this report has been included as Appendix J, and will be used to coordinate with regulatory agencies when acquiring permits for those wetlands that will be affected by the proposed action. The project corridor parallels existing Hooper Road and runs through residential/commercial properties, previously-disturbed vacant fields, pine-hardwood mixed forests, and riparian forests located west of Central, Louisiana as shown on Figure 1 in the Wetlands Findings Report (Appendix J). The project corridor is bounded on the west by Blackwater Road and on the east by Sullivan Road, and extends to the north and south on either side of Hooper Road up to the environmental boundary. The environmental boundary is a conservative estimate of the maximum extent of potential impacts associated with planned road widening activities and serves as the limit of investigation. It extends 150 feet from the existing centerline of Hooper Road, producing a project corridor that is 300 feet wide.

Wetlands were delineated in conformance with the USACE Wetland Delineation Manual (Technical Report Y-87-1) and the 2010 Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). Wetland boundaries were surveyed and recorded using a Trimble GeoXH handheld GPS unit with sub-meter accuracy.

Direct wetland impacts anticipated from the proposed build alternative:

- Alternative E – Hybrid (w/o sidepaths) – 0.85 acres

Direct stream impacts anticipated from the proposed build alternative:

- Alternative E – Hybrid (w/o sidepaths) – 1,773 linear feet

When taking permitting and mitigation factors into account, the Build Alternative would result in the fewest combined impacts to wetlands and streams. The final roadway designs and construction plans are not yet finalized; therefore, the quantity of direct stream and wetland impacts may increase or decrease. If the USACE determines that the above stream and wetland features are jurisdictional, then a Section 404 permit would be required. Due to the nature of the project and its impacts, it is possible that the project would qualify for a Nationwide Permit 13 – Linear Transportation Projects. Direct impacts to jurisdictional stream and wetland areas will likely require compensatory mitigation for which a cost is listed in Table 4.2.

Mitigation requirements for wetland loss may require creation of acreage off-site, in an approved wetland mitigation area. The final mitigation acreage requirements will be determined based

upon the functions and values of the impacted wetlands, as well as the characteristics of any mitigation banks or projects available at the time of permitting. The Wetland Findings can be found in Appendix J.

4.3.2 Scenic Rivers and Streams

The Louisiana Natural and Scenic River Act was passed in the early 1970's, creating one of the nation's largest, oldest, most diverse and unique state river protection initiatives. The Act seeks to preserve a river's or stream's aesthetic, scenic, recreation, fish, wildlife, ecological, archaeological, geological, botanical, and other natural and physical features. No streams in the project corridor are designated as scenic by the National Wild and Scenic Rivers System or the Louisiana Natural and Scenic Rivers System.

4.3.3 Endangered and Threatened Species

Personnel of the habitat Section of the Coastal & Nongame Resources Division (USFWS) have reviewed the preliminary data for the project and have determined that no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. Also, the USFWS has reviewed the project for effects to Federal trust resources under their jurisdiction and currently protected by the Endangered Species Act of 1973 (ACT) and determined that there will be no effects on those resources.

4.3.4 Floodplains

The project corridor is in the Amite and Comite River watersheds and contains the following major tributaries: Saunders Bayou, Blackwater Bayou, Beaver Bayou, Draughan's Creek, and Shoe Creek. Approximately 60% of the project corridor is within the 100 year flood zone.
Drainage structures included in the design for the proposed project would mitigate any impacts to the floodplain.

4.3.5 Public and Domestic Water Wells

A total of 48 Domestic Water Wells exists within 1 mile of the project. Of this total 28 are listed as active, 4 are listed as destroyed and 16 are listed as plugged and abandoned. This information was obtained from the Louisiana Department of natural Resources (LDNR) Strategic Online Natural Resources Information Systems (SONRIS) data base. The SONRIS data base information is included in Appendix A of the Phase 1 Environmental Site Assessment Report.

4.3.6 Groundwater

The USEPA defines a sole source aquifer as an underground water source that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend upon the aquifer for drinking water. A USEPA review concluded that the project is located within the boundaries of the Southern Hills aquifer system that has been designated a sole source aquifer and has determined that the project, as proposed should not have an adverse effect on the quality of the ground water underlying the project site.

4.3.7 Significant Trees

A windshield survey was conducted during the environmental phase regarding the location of potential significant trees located within or adjacent to the required ROW for the proposed project. Five (5) live oak trees (*Quercus virginiana*) were identified at Station 123+25 Rt. (2), 161+00 Rt., 219+75 Rt. and 220+00 Rt., as being significant according to the LADOTD Significant Tree Policy. The Design Section will indicate significant trees on the plans and implement a context sensitive design (i.e. preservation, specified limited impact, or special treatment) to accommodate these trees where practical. Any tree protection fencing is to be installed on LADOTD property only. Significant trees outside the required ROW, but with overhanging branches within the required ROW lower than 16', will be trimmed by a professional arborist licensed in the State of Louisiana. A professional arborist licensed in the State of Louisiana will be retained by the LADOTD District or the LADOTD contractor to ensure protection of the significant trees. When cutting, trimming, or removing a large tree or a group of trees located within or adjacent to the required ROW, the stakeholders and local government will be informed regarding those actions. Sufficient time will be given to those involved to respond or voice any concerns. The draft EA was available for public review at least 30 days before the Public Hearing. Those involved were afforded the opportunity to comment verbally or in writing at the Public Hearing or in writing up to 10 days after the hearing. The LADOTD Significant Tree Policy, EDSM I.1.1.21 and the Tree Protection Detail LD-02 can be found in Appendix K.

4.3.8 Prime Farmlands

Farmland is a natural resource that is a major factor in rural economics. The Farmland Protection Policy Act of 1981 requires federal agencies to minimize adverse effects of federal actions related to irreversible conversion of farmland to nonagricultural uses. Farmlands of concern include prime farmland, unique farmland, and land of statewide or local importance. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has determined that the proposed construction project is within the urban areas and therefore is exempt from the rules and regulations of the farmland Protection Policy Act (FPPA)-Subtitle I of Title XV, Section 1539-1549.

4.3.9 Wetlands Reserve Program

The project corridor does not contain any known property in the Natural Resources Conservation Service Wetland Reserve Program.

4.3.10 Air Quality Impacts

The study area is located in East Baton Rouge Parish, which is in attainment of CO, NO2, SO2, PM10, PM2.5 and Pb (EPA 2013e). The parish is within the Baton Rouge nonattainment area for 2008 O3 NAAQS and is in maintenance of the 1997 8-hour O3 standard. Transportation conformity applies to nonattainment and maintenance areas. However, the 1997 O3 NAAQS was revoked for transportation conformity purposes as of July 20, 2013; therefore, transportation conformity requirements do not apply to the 1997 O3 NAAQS. East Baton Rouge Parish is in nonattainment of the 2008 O3 NAAQS; therefore, transportation conformity applies to the 2008 O3 NAAQS. The project is included in the EPA and FHWA approved air quality conformity

analysis, *Air Quality Conformity Analysis of the Metropolitan Transportation Plan 2037 and Transportation Improvement Program 2013-2017 for the Baton Rouge Ozone Non-Attainment Area* (CRPC 2013), thus a regional analysis is not required. The project does not involve a significant number of diesel vehicles and is not anticipated to significantly increase the number of diesel vehicles, adversely affect intersections that are LOS D, E, or F, or change the LOS of an intersection to D, E, or F. Therefore, the project would not be required to conduct a project-level hotspot analysis for CO or PM. No significant MSAT impacts are anticipated from this project. Air toxics analysis is a continuing area of research. At this time, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. Emissions from construction of the proposed project should be minimized using newer, lower emitting equipment, retrofitting older equipment engines, controlling equipment activity and by implementing a dust control plan. For additional Air Quality Analysis information, see Appendix G.

4.3.11 Louisiana Coastal Zone Impacts

The project corridor is outside the coastal zone and does not contain any marine or estuarine habitats.

4.4 Engineering Constraints (Constructability)

The Build Alternative would be considered a roadway widening project and was analyzed to determine the most appropriate sequencing of construction to minimize impacts to local traffic on LA 408. A minimum of two lanes of travel will be maintained at all times during the length of the construction. Minimal traffic management at the intersections and tie-in points would be necessary.

During Phase I, the new outside lanes of LA 408, east and west bound (including the subsurface drainage system) would be constructed while maintaining traffic on the existing LA 408.

During Phase II, traffic would be shifted to the newly constructed outside lanes of LA 408, east and west bound while the remaining two lanes and raised median is constructed.

During Phase III, all traffic would be shifted to the newly constructed lanes.

4.4.1 Traffic Impacts

Travel patterns along LA 408 would not be expected to change for through traffic such as commuter traffic and others, but travel for residents, customers, and employees destined for homes and businesses on the proposed project corridor would be affected by the restriction on left-turns imposed by the median.

A construction sequencing plan will be developed during the design phase and followed to minimize the traffic disruptions during construction. Congestion would be expected to increase temporarily during this period, but the sequencing plan would ensure that traffic continues to flow.

4.4.2 Safety

Build Alternative

The addition of a divided median along a roadway has been proven to be safer than a traditional undivided multilane roadway by significantly reducing the occurrences of head on collisions. The addition of 2 feet to the outside 12 foot travel lanes (for a total of 14 feet) and sidewalks will provide a safer area for pedestrians and bicyclist to travel this corridor.

No Build Alternative

The "no build" Alternative will increase the risk of accidents and injuries to both pedestrians and motorist as future traffic predictions show higher amounts of vehicles using this roadway.

4.4.3 Pedestrians

The addition of sidewalks will provide a safer area for pedestrians to travel this corridor. Further, the addition of a divided median will reduce the number of pedestrian-vehicle conflict points. Construction plans will include the designation of appropriate safe crossings.

4.5 Indirect Impacts

In the FHWA's Environmental Policy Statement, the agency uses the term "indirect impacts" to encompass both secondary and cumulative effects, which may involve impacts to the social and economic base of a community, as well as impacts to natural resources such as floodplains, water quality, and wetlands. Secondary impacts are those that occur later in time or are removed in distance, while cumulative impacts are those that result from the incremental consequences of an action when added to past and reasonably foreseeable future actions. Secondary and cumulative impacts are less defined than direct impacts and may not be readily observable.

4.5.1 Secondary Impacts

The potential secondary impacts that may be associated with this project are described below.

4.5.1.1 Potential Adverse Secondary Impacts

Indirect impacts to water quality resulting from the proposed project are expected to result from an increase in storm water runoff from the addition of the impervious surface of the roadway itself, as well as the impervious surfaces of the buildings, driveways, and parking lots of the secondary development induced by the proposed roadway widening.

There will be an indirect impact to several businesses along the route, mainly due to the requirement of the businesses to stop utilizing the existing right of way for front parking.

4.5.1.2 Potential Beneficial Secondary Impacts

Implementation of the build alternative would include beneficial secondary effects such as relief of congestion on the existing LA 408 corridor, improved safety by managing access and

promoting alternative, healthier modes of travel with the addition of 2 feet to the outside 12 foot travel lanes (for a total of 14 feet) and sidewalks.

The access management of the median implementation will allow for safer movement decisions for homeowners or patrons accessing properties along LA 408. The potential for a landscaped median, curb and gutter storm water management, and underground utilities can provide an improved streetscape aesthetic design.

4.5.1.3 Cumulative Impacts

If the proposed project is built, it may increase the trend of development toward the east. It may also improve connectivity to other area recreation destinations, such as the Amite River and the new BREC Park, thereby attracting more visitors. Cumulative impacts may be most pronounced on vacant property and natural habitat because these resources may be converted for commercial or residential development. All of these factors may increase the impact on the rural character of the corridor over time.

4.6 Selection of Preferred Alternative

4.6.1 Comparison of Alternatives and Conclusions

The screening criteria identified in the “Comparison of Impacts by Alternative” table represent both the human and natural environmental impacts as well as engineering impacts of the two identified proposed alternatives and the “no build” alternative. These criteria were selected to represent transportation efficiency, safety, community issues, land acquisition and cost that are addressed in this study. The screening criteria are summarized in Table 4.2.

Table 4.2 - Comparison of Impacts by Alternative 16' Median Center Offset (West Section)[9] with 16' Median[8]/[9] (East Section)				
Evaluation Measure	Units	No Build	Alt. D (w/ sidepath)	Alt. E (w/o sidepath)
Potential Relocation Impacts				
Residential Relocations	Each	0	0	0
Business Relocations	Each	0	1	0
Community Relocations	Each	0	0	0
Other Relocations	Each	0	0	0
Potential Traffic Impacts During Construction		N/A	Moderate	Moderate
Potential Frontage Impacts				
Residential Properties	Each	0	17	13
Business Properties	Each	0	14	13
Community Properties	Each	0	~27	~10
Vacant/Unused Structures	Each	0	0	0
[5]Potential Underground Risk Sites				
Recognized Environmental Condition (RECs)	Each	0	7	7
Oil and Gas Wells	Each	0	0	0
[6]Natural Environment				
Wetlands Filled[10]	Acres	0	1.04	0.85
Scenic Streams	Each	0	0	0
Steam Crossings	Each	0	8	8
Direct Stream Impacts[10]	Lin. Ft.	0	1863	1773
Ponds Filled	Each	0	0	0
Sole Source Aquifer Impacts	Acres	0	0	0
Floodplain Encroachment	Acres	0	0	0
Protected Species	Each	0	0	0
Prime and Unique Farmland	Acres	0	0	0
Coastal Res./Essential Fish Habitat	Each	N/A	N/A	N/A
Utilities				
LADOTD-listed Water Wells	Each	0	0	0
[7]Noise				
Residential Receivers Noise Level > 66 dBA	Each	7	13	13
Residential Receivers Increase > 10 dBA	Each	0	0	0
Total # Impacted Receivers	Each	7	13	13
[1]Construction Costs	$Million	N/A	$18.69	$18.26
Utility Relocation	$Million	N/A	$1.42	$1.42
[2]Administration and [3]Design	$Million	N/A	$2.80	$2.73
[4]Environmental Mitigation	$Million	N/A	$0.212	$0.199
ROW Acquisition	Acres	N/A	12.17	9.86
*ROW Costs	$Million	N/A	$6.09	$4.93

*The estimated ROW costs include costs for land acquisition, improvements and damages only (use $500K/acre)
~ Church parking slots
[1]Construction Cost includes 15% contingency
[2]Administration includes Program and Construction Mgt. @ 5% of Construction cost
[3]Design is estimated to be 10% of Construction cost
[4]$25,000/acre for Wetlands filled and $100/ft for Direct Stream Impacts
[5]Phase 1 Environmental Site Assessment
[6]Wetlands Findings Report
[7]Noise Analysis Report
[8]East Section will be northerly widening from Joor Road to Shoe Creek Drive, thence center widening to Sullivan Road
[9]14 foot outside lanes
[10]Acres and Lin. Ft. quantities adjusted from Wetland Findings Report based on reduced footprint of alternates

5.0 Agency Coordination and Public Involvement

5.1 Solicitation of Views

Early in the project planning stages 81 federal, state, and local agencies and officials were provided project information on February 5, 2014. The Solicitation of Views information is included in Appendix E of this draft EA. A list of agencies consulted and a summary of their comments are provided in Table 5.1.

Table 5.1 - Summary of Responses to the Solicitation of Views

Date of Comment	Agency/Tribe	Comment Format	Comment Summary
28-Mar-14	LDEQ	Letter	East Baton Rouge Parish is a nonattainment parish. This project is subject to the State's transportation conformity regulations. If the project is deemed regionally significant it must be included in a conforming metropolitan transportation plan.
21-Feb-14	LDWF National Heritage Program	Letter	No impacts to rare, threatened, or endangered species or critical habitats; no state or federal parks, wildlife refuges, scenic streams, or WMAs.
10-Feb-14	US FWS	Letter	Proposed project will have no effect on resources.
13-Feb-14	US EPA	Letter	Project is located on the Southern Hills aquifer system that has been designated a sole source aquifer by the EPA. Based on the information provided for the project, we have determined that the project, as proposed, should not have an adverse effect on the quality of the ground water
31-Mar-14	LDHH	Letter	No objection to the project. Be aware of and comply with all applicable La. State Sanitary Code regulations (LAC 51, as applicable)
21-Mar-14	Capital Region Planning Commission	Letter	Supports the project
10-Mar-14	Capitol Soil & Water Conservation District	Letter	No objection to this project nor should it affect any of our work in the immediate vicinity
25-Feb-14	Capital Area Ground Water Conservation District	Letter	Please be aware that there are numerous wells adjacent to the right-of-way especially a municipal public supply well, well #033-623.
20-Feb-14	State Land Office	Letter	No objections to the proposed improvements.

26-Feb-14	NRCS	Letter	The proposed construction areas are within the urban areas and therefore are exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA).
13-Feb-14	Office of the Planning Commission City of Baton Rouge and Parish of EBR	Letter	The City of Central is not included in FUTUREBR, the Comprehensive Land Use and Development Plan for the City of Baton Rouge -Parish of EBR. Therefore we have no comments regarding the project.

5.2 Public Meeting

A public meeting was held on April 15, 2014 in the Central Middle School Cafeteria in keeping with the intent of allowing the public to participate in the planning process. This meeting was conducted to identify possible adverse effects and beneficial social, economic and environmental concerns related to the project and to solicit comments concerning the proposed alternatives. The meeting was held as an informal open house with a station format including a short presentation on the project and project exhibits. The objective of the public meeting was to seek input from individuals and community organizations on the issues and concerns related to the potential impacts associated with the proposed widening of Hooper Road, LA 408 from Blackwater Bayou to Sullivan Road (LA 3034). The meeting was attended by approximately 22 citizens, 11 local officials or agency representatives and project team members.

The public meeting was advertised in several ways. A public notice was advertised in The Advocate newspaper on March 26 thru 29, 31, 2014 and April 1 thru 5, and 7 thru 12, 2014. It was also posted on the LADOTD website beginning on March 24, 2014.

Copies of each form of advertisement are included in the Public Meeting Information in Appendix E.

Public Comments

Comment forms were handed out to each attendee when signing in. During the open house, attendees were able to either turn in a completed written form or provide verbal comments via a digital voice recorder. Oral comments were logged and transcribed within the comment response matrix. Attendees were also able to turn in comment forms via email, fax or mail. Comments were received through April 25, 2014. A comment/ response matrix is shown in Table 5.2.

Table 5.2 - Comments and Responses (Public Meeting)	
Comment	Response
Large horse and cattle trailers being able to turn or uturns with those vehicles. There are many horse owners in the Central area. House is 11333 Hooper Rd.- loss of house - already close to the road. Our house is over 100 years old and in quite good condition.	LADOTD's Access Management Policy is proposed to be implemented through the use of raised medians; right-in/right-out only from residential and business driveways as well as adjacent roadways; and median openings allowing U-turns and left turns. In addition, ROW will be required for 11 bulb-outs which will provide the necessary turn radius to allow vehicles to make U-turns.
In addition to left turn lanes, the following intersections need right turn lanes: Hooper at Lovett and Hooper @ Joor. Median openings need to be placed at : BRCC (Community College) and BREC Park	The number and location of left-in turns will be determined during final design and will be based on LADOTD design guidelines and policies. The need for right turn lanes will be assessed in the Traffic Analysis.
A long overdue project. Resides on Hooper and is concerned about to go either east or west. Opposes the raised median. Need to address owners with RVs and cattle trailers making u-turns.	Traffic safety is a primary concern of LADOTD and is being incorporated into the design of this project through the Department's Access Management Policy. By having a divided median with left turn-in only and the use of right turns out followed by U-turns to go left, the safety of vehicular traffic is substantially increased. The proposed design would reduce the chance of an accident by 62 percent as compared with a continuous center turn lane and allowing left turns out without a signal. This design also offers the best solution to the capacity requirements for the area. The number and location of left-in turns will be determined during final design and will be based on LADOTD design guidelines and policies.
The centered rebuild would best serve the majority of property owners. The expansion is absolutely necessary to handle the traffic congestion.	Comments noted

Comment Summary

A total of five (5) comments were received regarding the Hooper Road, LA 408, project during the public comment period. At the open house, two (2) written comment forms were turned in. Three (3) written comment forms were mailed within the comment period.

5.3 Public Hearing

After East Baton Rouge Parish, LADOTD and FHWA approval of the Draft EA document, the document will be distributed and made available to the public according to FHWA guidelines. A public hearing is scheduled for Spring 2016 and the Notice of Public Hearing will be advertised in local newspapers. Public comments made during the public hearing will be collected.

5.4 Response to Comments

All comments received during the Public Hearing and the 30 day review period will be addressed according to FHWA and LADOTD standards.

6.0 Comparison and Selection of the Build Alternative

The Build Alternative (Alternate E) is being recommended and carried forward in the DRAFT EA. As can be seen in **Table 4.2 - Comparison of Impacts by Alternative** it has the least impacts to Residential, Business and Community properties, Wetlands and Direct Streams and the lowest total cost.

7.0 References Cited

American Association of State Highway and Transportation Officials. 2011. *A Policy on Geometric Design of Highways and Streets, 6th Edition.*

Louisiana Department of Transportation and Development (LADOTD). 12-04-2009. *Minimum Design Guidelines*

Louisiana Department of Transportation and Development (LADOTD). 2011. *Highway Traffic Noise Policy.*

City of Central. 2010. *Land Use Plan*

US Department of Commerce. 2010 *Census of Population and Housing, Various Census Data, Bureau of the Census.*

Transportation Research Board (TRB). 2010. *Highway Capacity Manual*